REMARKS

Claim Status

Applicants acknowledge, with appreciation, the indication that claims 6-8, 11, 13, 14, 17-19, 21-23 and 32 contain allowable subject matter.

Non-elected claims 24-30 have been cancelled, without prejudice.

Claims 1-23, 31 and 32 are now presented for examination, with claim 1 being in independent form. Claim 1 has been amended. No new matter has been added.

Reconsideration of the application, as amended, is respectfully requested.

Overview of the Office Action

Claims 1, 2, 4, 5, 9, 10, 12, 15, 16, 20 and 31 stand rejected under 35 U.S.C. §103(a) as unpatentable over U.S. Patent No. 4,210,389 ("*Burkhart*") in view of U.S. Patent No. 6,228,456 ("*Butterbach*").

Claim 3 stands rejected under 35 U.S.C. §103(a) as unpatentable over *Burkhart* in view of *Butterbach*, and further in view of U.S. Patent No. 6,806,544 ("*Lin*").

Applicants have carefully considered the Examiner's rejections, and the comments provided in support thereof, and respectfully disagree with the Examiner's analysis. For the reasons which follow, it is respectfully submitted that all claims of the present application are patentable over the cited references.

Patentability of Independent Claim 1 under 35 U.S.C. §103

It is respectfully submitted that *Burkhart* constitutes non-analogous art and, therefore, cannot be applied as prior art against the present invention. Moreover, even if *Burkhart* is applied as prior art, claim 1 is allowable thereover.

1. Non-analogous art:

The present invention is directed to an electrical contact for an optoelectronic semiconductor chip. *Burkhart* is directed to a bond used for attaching components of a solid state laser to each other.

The Examiner states (page 5 of the Office Action) that a "preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure ..." It is noted, however, that the preamble specifies the pertinent art of the invention and gives life and meaning to limitations recited in the body of the claim. Thus, claim 1 is explicitly directed to the art of an electrical contact for an optoelectronic semiconductor chip. The art of a bond used for attaching components of a solid state laser to each other is non-analogous. A person with ordinary skill in the art of electrical contacts used for an optoelectronic semiconductor chip who is seeking a solution to a problem encountered in that field would not normally look for that solution in the field of bonds used for attaching components of a solid state laser to each other. Therefore, *Burkhart* cannot be applied as prior art against the present invention.

2. Patentability of claimed subject matter:

Even if *Burkhart* is applied as prior art, claim 1 is allowable thereover for the reasons provided below.

The Examiner (pg. 5 of the Office) Action has stated that:

> The recitation "electrical contact" has not been given patentable weight because the recitation occurs in the preamble.

Claim 1 has been amended to recite "a protective layer (3) over said mirror layer (2); a layer sequence of a barrier layer (4) and a coupling layer (5) over said protective layer; and a solder layer (8) over said layer sequence; wherein said mirror layer, protective layer, layer sequence and solder layer are all electrically conductive so that current can flow through the electrical contact to and from the semiconductor chip." No new matter has been added.

Burkhart (col. 1, lines 54-59; Fig. 1) teaches a laser that includes an elongated reflector 2 of elliptical cross-sectional configuration, a light source 4 located at one focus of the elliptical reflector 2, a laser rod 6 mounted at the other focus of the reflector 6, and a heat sink or mount 8 that supports the rod 6 in the reflector 2. *Burkhart* (col. 3, lines 13-14) states that "the laser rod 6 and mount 8 are joined together along a bond 10." *Burkhart* (col. 3, lines 32-36; Fig. 3) states that "the bond 10 consists of a reflective layer 20, a barrier layer 22, a wetting layer 24, a solder layer 26, and another wetting layer 28 arranged in that order between the convex outer surface of the rod 6 and the concave surface 12 at the small end of the mount 8".

The Examiner has combined *Butterbach* with *Burkhart* based on the failure of *Burkhart* to disclose "a protective layer over the reflector layer 20". However, the combination of

Burkhart and *Butterbach* fails to achieve the invention recited in amended independent claim 1. *Butterbach* (col. 3, lines 15-19) teaches hotmelt adhesives that consist of known components, such as a thermoplastic polymeric binder, tackifying resins, optionally plasticizers, stabilizers/antioxidants, optional fillers or extenders. *Butterbach* (col. 3, lines 22-24) states that "suitable polymeric binders are thermoplastic elastomers, polyamides, ethylene copolymers, polyolefins and polyesters with a high amorphous component". *Butterbach* (col. 3, lines 24-30) teaches the use of electrically insulating materials for an adhesive layer. That is, *Butterbach* teaches an adhesive (protective) layer that is electrically insulating. Consequently, *Butterbach* clearly teaches away from the present invention which is directed to an electrical contact that is electrically conductive.

Applicants' claim 1 recites a protective layer. Combining *Butterbach* with *Burkhart* to provide such a protective layer, which the Examiner has conceded is absent from *Burkhart*, achieves an inoperative electrical contact because the insulating layer taught in *Butterbach* would be inserted into a sequence of metal layers and, thus, would interrupt the required flow of current to and from the semiconductor chip. A person with the ordinary level of skill in the art of designing electrical contacts would most certainly avoid making such a combination. Therefore, *Butterbach* fails to cure the deficiency of *Burkhart*. Consequently, amended independent claim 1 is patentable over the combination of *Burkhart* with *Butterbach*.

The Examiner has applied *Liu* based on the failure of *Burkhart* and *Butterbach* to teach or suggest "a nitride compound semiconductor material", as recited in dependent claim 3. However, *Liu* fails to cure the deficiencies of *Burkhart* and *Butterbach*, since *Liu* also fails to teach the features related to an electrical contact that is electrically conductive, as recited in

independent claim 1. Consequently, amended independent claim 1 is patentable over the combination of *Burkhart, Butterbach* and *Liu.*

Dependent claims

In view of the patentability of amended independent claim 1, for the reasons presented above, each of dependent claims 2-23, 31 and 32 is patentable therewith over the prior art. Moreover, each of these claims includes features which serve to even more clearly distinguish the invention over the applied references.

Entry of the Amendment is Appropriate

Entry of the amendment is appropriate because no new issues have been raised by the above amendment that would require further consideration and/or search.

Conclusion

Based on all of the above, it is respectfully submitted that the present application is now in proper condition for allowance. Prompt and favorable action to this effect and early passing of this application to issue are respectfully solicited.

Should the Examiner have any comments, questions, suggestions or objections, the Examiner is respectfully requested to telephone the undersigned in order to facilitate reaching a resolution of any outstanding issues.

It is believed that no fees or charges are required at this time in connection with the present application. However, if any fees or charges are required at this time, they may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,
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Dated: July 6, 2006